KOLESNIKOVA, N.I.; ARBUZOV, S.V.

Rapid (semihot) method for leather tanning at raised temperatures
and the sults of its use. Nauch.-issl. trudy TSNIKP no.33:
7-14 '63   (MIRA 18:1)

METELKIN, A.I.; KOLESNIKOVA, N.I.

Introduction of new production methods and materials in tanning.
Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh.
inform. 17 no.12:41-43 D '64.   (MIRA 18:3)

KOLESNIKOVA, N. K. Cand Med Sci -- (diss) "On the Ayakkalkanskiy mineral-water treatment of patients with chronic liver and biliary tract diseases." Alma-Ata,

1956. 16 pp 22 cm. (Inst of Physiology, Inst of Clinical and Experimental Surgery, and Inst of Marginal Pathology, Acad Sci Kazakh SSR), 100 copies
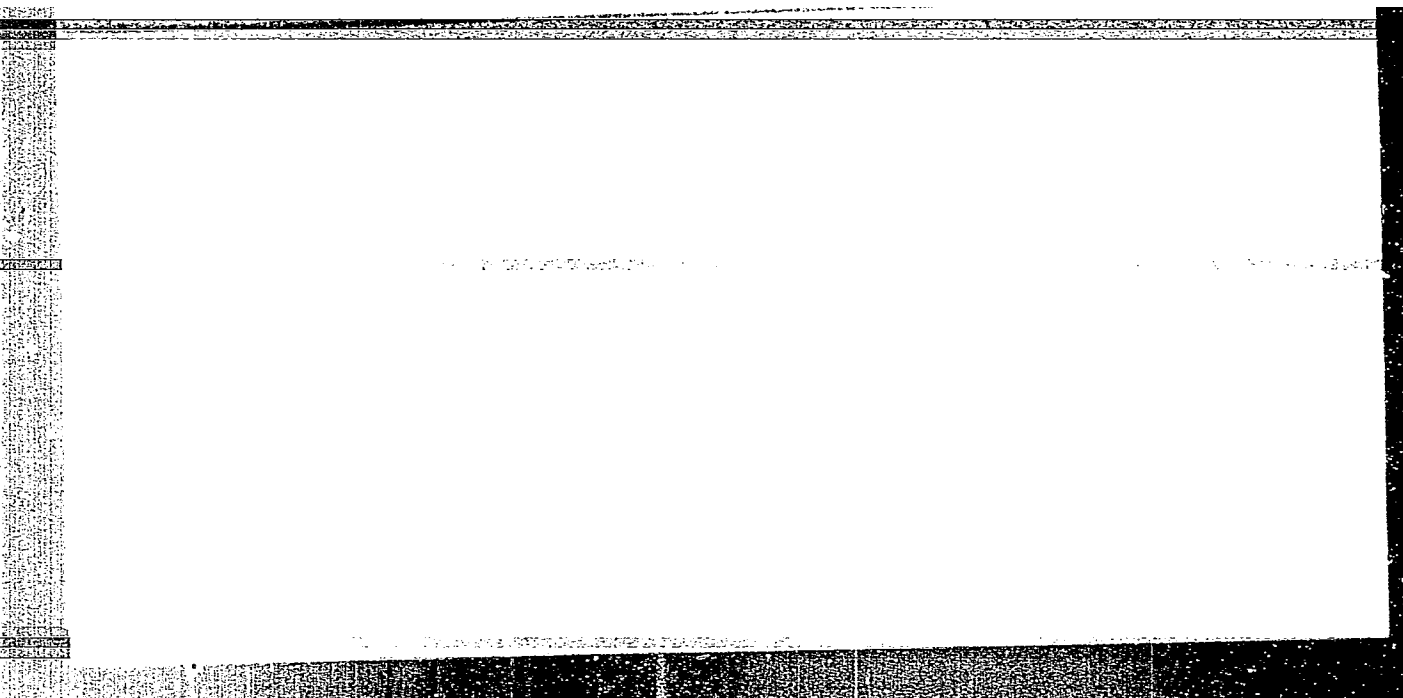
(KL, 7-57, 109)

KOLESNIKOVA, N.K.

Treating chronic diseases of the liver and biliary tract with Ayak-Kalkan mineral water. Zdrav.Kazakh. 16 no.11:18-27 '56. (MIRA 10:1)

1. Iz Instituta klinicheskoy i eksperimental'noy khirurgii (direktor akademik Akademii KazSSR A.N.Syzganov) Akademii nauk Kazakhskoy SSR
    (ALMA-ATA PROVINCE--MINERAL WATERS)
    (BILIOUS DISEASES AND BILIOUSNESS)

KOLESNIKOVA, N.K. (Alma-Ata)

Development of physical therapy in Kazakhstan. Vop. kur.,
fizioter. i lech. fiz. kul't. 28 no.5:467-468 S-O '63.
(MIRA 17:9)

KOLESNIKOVA, N.K.

All-Union Conference of Physical Therapists and Health Resort
Specialists. Zdrav. Kazakh. 18 no. 2:58-64 '58. (MIRA 13:8)
(THERAPEUTICS, PHYSIOLOGICAL--CONGRESSES)

ACC NR: AP7010727   SOURCE CODE: UR/0189/66/000/003/0067/0070

AUTHOR: Kolesnikova, N. M.; Iofa, B. Z.

ORG: Department of Radiochemistry, Moscow State University (Kafedra radiokhimii Moskovskogo gosudarstvennogo universiteta)

TITLE: Investigation of the state of selenium (IV) in hydrochloric acid solutions

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 3,
1966, 67-70

TOPIC TAGS: spectrophotometric analysis, selenium compound, hydrochloric acid, spectrophotometer /SF-4 quartz spectrophotometer

SUB CODE: 07,14

ABSTRACT: A spectrophotometric investigation is presented on the state of selenium(IV) at a temperature of $18 \pm 3°$ in hydrochloric acid solutions. Absorption spectra were measured on a SF-4 quartz spectrophotometer, where cells with the following thicknesses of absorbing layer were used: 0.1, 0.2 and 10 mm. Selenium (IV) solutions were prepared by dissolving selenium dioxide in 12 N HCl or by chlorination of black metallic selenium in 12 NHCl. In the latter case, $SeCl_4$ was first obtained, and subsequently dissolved in acid. Both methods of preparing the

UDC: 546:23:535:313;535.399

Card 1/2

ACC NR: AP7010727

solutions lead to identical results, however the time to reach equilibrium differs. Thus, when SeO_2 was dissolved in 12M HCl, equilibrium was established in seven days, while in the latter case in one day. The absorption maximum at 310 ± 3 mmicrons can relate to the complex ion $SeCl_6^{-2}$, while absorption maxima of 345 and 385 mmicrons are possibly related to the effect of the glacial solvent on the electronic states of selenium(IV) and not to any chloride complex of selenium(IV).

Orig. art. has: 2 figures and 1 formula. [JPRS: 40,361]

Card   2/2

KOLESNIKOVA, N.M.

Category : USSR/Solid State Physics - Mechanical properties of crystals and poly-   E-9
crystalline compounds

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 1370

Author   : Arkharov, V.I., Ivanovskaya, S.I., Kolesnikova, N.M., Fofanova, T.A.
Inst   : Inst. of Metal Physics, Ural Branch, Acad. Sci. USSR; Ural Polytechn. Inst.,
USSR
Title   : On the Mechanism of the Influence of Phosphorus and Molybdenum Admixtures
on the Temper Brittleness of Steel

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 2, No 1, 57-65

Abstract : Specimens of chrome-nickel structural steel with normal and increased con-
tent of P (within its solubility limits) were heat treated to produce a
viscous or a brittle state. The fracture surfaces were chemically anal-
yzed using the Tananayev chipless method. It was established that the content
of P is substantially higher in the surface layer of brittle (inter-crystal-
litic) fracture than in that obtained in impact fracture (the latter has
in the surface layer a content of P that is equal to the average value ob-
tained by usual chemical analysis for the alloy as a whole). Analogous re-
sults were obtained with steels of the same composition, but with Mo added;

Card   : 1/2

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 1370

ih these cases the enrichment of P in the surfaces of the brittle fracture
is less than in steels without molybdenum. It is also established that the
diffusion of phosphorus in steel is predominantly along the grain boundaries.
The results are explained from the point of view of the theory of the inter-
nal inter-crystallitic adsorption of P (Arkharov, V.I., Dokl. AN SSSR, 1945,
50, 293).

Card   : 2/2

NOVIKOV, A.S.; TOLSTUKHINA, F.S.; KOLESNIKOVA, N.N.

    Creep of the SKF-26 vulcanizates. Kauch. i rez. 23 no.5:8-14 My '64.
                                                                (MIRA 17:9)
    1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

DAVYDOV, V.N., inzh.; KOLESNIKOVA, N.N., inzh.

    Improving the electric power supply systems of d.c.electric railroads.
Zhel.dor.transp. 42 no.11:18-22 N '60.   (MIRA 13:11)

    1. Glavnyy spetsialist Transelektroproyekta (for Davydov). 2. Rudko-
voditel' brigady Transelektroproyekta (for Kolesnikova).
        (Electric railroads—Substations)

NOVIKOV, A.S.; TOLSTUKHINA, F.S.; KOLESNIKOVA, N.N.

    Creep of vulcanizates based on the viton A type polymer.
    Kauch.i rez. 21 no.5:9-14 My '62.   (MIRA 15:5)

    1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
               (Rubber, Synthetic—Testing)

ACCESSION NR: AP4038907   S/0138/64/000/005/0008/0014

AUTHORS: Novikov, A. S.; Tolstukhina, F. S.; Kolesnikova, N. N.

TITLE: Creep in vulcanized rubber SKF-26

SOURCE: Kauchuk i rezina, no. 5, 1964, 8-14

TOPIC TAGS: vulcanized rubber, relative deformation, argon, creep process, oxygen concentration, rubber SKF 26

ABSTRACT: The effect of air and argon on SKF-26 vulcanized rubber creep with various vulcanization bonds and identical molecular chain structure was investigated. The types of vulcanized rubbers tested were: types GMDA;
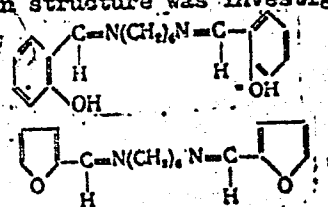
tin diethylditiocarbamate, and benzoyl peroxide. Relative deformation versus time curves were obtained for all rubber specimens at various temperatures (180-260C) both in air and in argon. The results show a significant decrease in the actual

Card 1/2

MAGAL'NIK, Ye.V., kand.med.nauk; KOLESNIKOVA, N.S. , vrach

Condition of the pupils in hemicrania. Vop.neirooft. 7:173-
179 '61.   (MIRA 14:9)
             (MIGRAINE)   (PUPIL (EYE))

BDS

Klokman, V. R.; Kolesnikova, N. S.

Study of the behavior of Sr sup 90 in melts in the systems PbCl sub2-SrCl
and PbCl sub2-SrCl sub2-NaCl by isomorphic co-crystallization

Radiokhimiya, v. 5, no. 3, 1963, 284-290

Sr sup 90, Pb sub 2, SrCl Sub 2, LiCl, NaCl, co-crystallization

This study presents the experimental results obtained from the study
...tion of $SrCl_2$ in the crystalline melt of $PbCl_2$ in simple eutectic
PbCl-LiCl and PbCl-NaCl. The study showed that the coefficient of
...tion of $SrCl_2$ remains constant not only at the time of change in
...of the solid phase, but also during the change of the composition of the
...change of temperature in the $PbCl_2$-LiCl system. The coefficient
...Cl_2 in this system is 2.3. In the system $PbCl_2$-NaCl, the coefficient
...lization of $SrCl_2$ remains practically constant during the change of
...and composition of the melt. However, it differs from the $SrCl_2$
...obtained in the $PbCl_2$-LiCl system. The coefficient of crystallization

ACCESSION NR: AP3003679

. O

... latter is 8,9. It was shown that by isomorphic co-crystallization in
... simple eutectic systems $PbCl_2$-LiCl and $PbCl_2$-NaCl, the composition of $SrCl_2$
... a microquantity does not depend on the nature of the solvent, however,
... activity of the lead ions in the NaCl fusion decreases on account of the
... of complex lead ions. Orig. art. has: 5 tables.

ASSOCIATION: none

... 23Sep62   DATE ACQ: 07Aug63   ENCL: 00

... CH, ML   NO REF SOV: 015   OTHER: 004

2/2

ACCESSION NR: AF4020054

S/0186/64/006/001/0011/0018

AUTHOR: Klokman, V. R.; Kolesnikova, N. S.

TITLE: A study of complexing in fusions by the isomorphic crystallization method in the systems PbCl sub 2-Sr sup * Cl sub 2-RbCl and PbCl sub 2-Sr sup * Cl sub 2-CsCl

SOURCE: Radiokhimiya, v. 6, no. 1, 1964, 11-18

TOPIC TAGS: complexing, fusion, isomorphic crystallization method, PbCl sub 2-Sr sup *Cl sub 2-RbCl, PbCl sub 2-Sr sup *Cl sub 2-CsCl, SrCl sub 2, LiCl, NaCl, KCl

ABSTRACT: Study of the coprecipitation of Sr^{90} with crystals of lead chloride, precipitated from fusions of lithium and sodium chloride, which, with $PbCl_2$ and $SrCl_2$, provide systems with a simple eutectic, led to an interest in comparing results obtained on the behavior of Sr^{90} in more complex systems in which there is a formation of complex compounds. From the fusibility curve for the binary system $PbCl_2$-$MeCl_2$ and $SrCl_2$-$MeCl$, where Me is an alkali metal, complex compounds of lead and strontium precipitating in a separate solid phase begin to develop in systems with potassium chloride. The number of compounds and their stability are

Card 1/1?

ACCESSION NR: AP4020054

different during conversion from one alkali chloride to another, both for the system with $PbCl_2$ and the system with $SrCl_2$. Coefficients of crystallization of $SrCl_2$ in systems $PbCl_2$-RbCl and $PbCl_2$-CsCl are determined. Higher values are obtained in systems $PbCl_2$-RbCl and $PbCl_2$-CsCl as compared with the systems formed by lead chloride with LiCl, NaCl and KCl. This is explained by the increased stability of complex compounds of the macrocomponent with an increase of ionic radii of alkali metals. It was established that the stability of complex compounds of $PbCl_2$ with chlorides of alkali metals, under the conditions in question, is greater than the stability of the corresponding complex compounds of strontium. Using an isomorphic method of cocrystallization, it is possible to establish the presence of complex compounds in the fusion, not only in the area of crystallization of complex compounds but also in the area of precipitation in the solid phase of the pure component. Orig. art. has: 9 tables, 4 figures.

Card 2/3 2

Country : USSR   M
Category: Cultivated Plants. Commercial. Oil-Bearing.
          Sugar-Bearing.

Abs Jour: RZhBiol., No 11, 1958, No 49031

Author : Kolesnikova, N.T.
Inst   : State Commission on Variety Testing Agric. Crops.
Title   : The Method of Dense Sowing of Gambo Hemp.

Orig Pub: Inform. byul. Gos. komis. po sortoispyt. s.-kh.
          kul'tur pri M-ve s.kh. SSSR, 1956, No 11, 15-17

Abstract: An experiment is generalized, carried out at the
          Nizhne-Chuyskiy Fiber Crop Sovkhoz in the Kirgiz
          SSR. In this experiment, gambo hemp was sown in
          narrow, double rows with a distance of 34 cm between
          the rows and 11 cm between the strips. By this new

Card   : 1/2

M-110

Country : USSR
Category: Cultivated Plants. Commercial. Oil-Bearing.
          Sugar-Bearing.

Abs Jour: RZhBiol., No 11, 1958, No 49031

          sowing method, the richness of the plant stands
          has been increased by 40% compared with the method
          of wide and single rows. As a result, a better
          utilization of the area, more even stems and an
          earlier closure of the openings between the rows
          is reported. Increasing the harvest of gambo temps
          stalks by 13-27%. -- D.B. Vakhmistrov

Card   : 2/2

KOLESNIKOVA, N. V. , BALACHOVSKIJ, S. D., and TROITSKAJA, N. A

6509   KOLESNIKOVA, N. V., BALACHOVSKIJ, S. D., and TROITSKAJA, N. A.
Physiological action and changes in the composition of substances
related to vitamin A Biochim., Mosk. 1950, 15/3(267-271) Tables I

Antihistamine action of derivatives of citral was investigated on the
guinea-pig intestine. Citronellal, 6-7- dibromocitral and geraniol
act similarly to citral. Weaker action was noted with mesityle oxide.
It is concluded that the whole molecule and not a particular part of
citral is the carrier of the specific antihistamine activity. The
therm "true analgetic" is proposed for substances producing depression
of pain without changes of excitability of other senses.
Szabuniewiez -Cracow

SO: Excerpta Medica, Section II Vol. 4, No. 12

Inst. Biochem. im A.N.Bakh, Acad. Medical Sci USSR

TROITSKIY, S.A.; KOLESNIKOVA, N.V.; KOZHEVNIKOVA, Z.I. (Gor'kiy)

Significance of antileukocytic autoantibodies in the pathogenesis
of benzene leukopenia. Gig.truda i prof.zab. 3 no.4:50-51
Jl-Ag '59.   (MIRA 12:11)

1. Institut gigiyeny truda i profzabolevaniy.
            (ANTIGENS AND ANTIBODIES)
            (BENZENE--TOXICOLOGY)

S/169/62/000/001/045/083
D228/D302

AUTHORS: Kazanskiy, A. B. and Kolesnikova, N. V.

TITLE: Heat balance of the valley surface of the R. Sel'dara
               near the tongue of the Fedchenko Glacier

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 1, 1962, 21, ab-
               stract 1B153 (V sb. Glyatsiol. issledovaniya, no. 6,
               M., AN SSSR, 1961, 104-110)

TEXT: The authors present the results of observations, obtained
by the glaciologic expedition of the Akademiya nauk Uzbekskoy SSR
(Academy of Sciences, Uzbek SSR), for the heat balance of the
ground surface and for wind, temperature, and humidity conditions.
It is noted that a mountain valley circulation is observed in the
summer months near the tongue of the Fedchenko Glacier. The ampli-
tude of the mean-daily variation of the heat flow in the vicinity
of the tongue of the Fedchenko Glacier has a considerable magni-
tude. Convection is observed in the morning and afternoon hours
above the valley surface of the R. Sel'dara. At night the valley

Card 1/2

L 32748-66   EWT(m)/EWP(j)/EWP(t)   IJP(c)   JD
AP6010112   (A)   SOURCE CODE: UR/0190/66/008/003/0481/0485

AUTHORS: Tukel'son, I. I.; Garmonov, V. I.; Nazarova, A.B.;
Kolesnikova, O. U.

ORG: Voronezh Institute of Technology (Voronezhskiy tekhnologicheskiy
institut)

TITLE: Investigation of the polycondensation of diphenyl with di-
chloroethane in the presence of aluminum trichloride and the structure
of the products obtained

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 3, 1966, 481-485

TOPIC TAGS: diphenylamine, aluminum chloride, polycondensation,
polymer, molecular weight, catalyst, chemical reaction kinetics

ABSTRACT: The reaction of diphenyl with dichloroethane in the presence
of the AlCl$_3$ results in the formation of polydiphenylenethyl. It was
found that the molecular weight of polydiphenylenethyl increases with
the decrease of the diphenyl-to-dichloroethane ratio, with the excess
of the former resulting in the formation of a foam-like crosslinked
polymer. With the catalyst amount is increased, the molecular weight
first rises and then drops so that there is an optimum catalyst con-
centration for every diphenyl-to-dichloroethane ratio. For the ratio

Card 1/2   UDC: 541.64+678.01:53+678.71

L 2274-66

ACC NR: AP6010112

of 1.5:1.0, the molecular weight of 4000 is reached at 23% of catalyst concentration. The kinetics of the reaction are satisfactorily described by the equation $P = \dfrac{t}{19+1,665\ t}$, where P is the conversion, and t is the time from the beginning of the reaction in minutes. It follows from the IR spectrum that the polydiphenylenethyl molecules possess a linear structure with ortho-positions of substituents. Orig. art. has: 3 figures, 1 formula, and 1 table. [Based on author's abstract]

[NT]

SUB CODE: 07/   SUBM DATE: 02Apr65/   ORIG REF: 007/   OTH REF: 004/

Card   2/2

KOLESNIKOVA, P. D.

KOLESNIKOVA, P. D.- "Physiological Evaluation of the Water Regime of Alfalfa in Pure and Mixed Sowings." Min of Higher Education US R, middle Asia State U imeni V. I. Lenin, Tashkent, 1955 (Dissertations For the Degree of Candidate of Biological Sciences)

SO: Knizhnaya Letopis' No, 26, June 1955, Moscow

KOLESNIKOVA, P.D.

USSR/Physiology of Plants - Water Regime.   I.

Abs Jour   : Ref Zhur - Biol., No 15, 1958, 67834

Author   : Kolesnikova, P.D.

Inst   : Academy of Sciences UzSSR

Title   : The Influence of Aqueous and Nutritive Regimes on the
               Growth and Development of Lucerne and Grasses.

Orig Pub   : Sb.: Vopr. fiziol. khlopchatnika i trav. No 1, Tashkent,
               AN UzSSR, 1957, 107-131.

Abstract   : In the Agricultural Institute of the Academy Sci UzSSR,
               field and vegetation experiments were conducted for two
               years on plots of lucerne, both pure and mixed with an
               orchard grass combination and with multi-yield ray grass.
               In the third leaf layer from the top the magnitude of the
               suctorial force (determined by V.S. Shardakova's gradient
               tube method) and, to a lesser extent, of the osmotic

Card 1/2

- 17 -

KOLESNIKOVA, P.D.

Rates of suction increase in the leaves of lucerne and cereal
grasses in the periods between watering. Dokl. AN Tadzh.SSR
3 no.3:43-47 '60.   (MIRA 16:2)

1. Stalinabadskiy institut im. T.G. Shevchenko. Predstavleno aka-
demikom AN Tadzhikskoy SSR N.N. Ovchinnikovym.
                    (Forage plants--Water requirements)

KOLESNIKOVA, P. Yu.

CA

26

Chlororubber varnishes from domestic raw materials. P. Yu. Kolesnikova. *Byull. Malyarnoi Tekh.* 1939, No. 10, 23-8; *Khim. Referat. Zhur.* 1940, No. 7, 07.—Expts. were carried out for the production of varnishes on chloro-rubber base prepd. from the Soviet synthetic rubber (Sov-prene) and plant rubber (from kok-saghyz and guayule). The contents of Cl in the chlororubbers varied from 40 to 60%. The colorless varnishes, pigmented enamels and bitumen chlororubber varnishes prepd. on the basis of these chlororubbers formed hard, glossy, chemically stable films.   W. R. Henn

METALLURGICAL LITERATURE CLASSIFICATION

Kolesnikov, P. Yu.

USSR/Chemistry - Protective coatings   FD-3005

Card 1/1   Pub. 50 - 6/17

Authors   : Kolesnikova, P. Yu., Korzin, N. V.

Title   : Experience in the application of anti-corrosion lacquer, varnish,
                and paint materials at chemical plants

Periodical   : Khim. prom. No 6, 345-350, Sep 1955

Abstract   : The results of testing various anti-corrosion coatings at plants
                producing chlorine, nitrogen fertilizers, and superphosphate are
                reported. Five figures.

Institution   : All-Union Office "Lakokraskopokrytiye" [Lacquer, Varnish, and
                Paint Coatings]

KOLESNIKOVA, R. S.

KOLESNIKOVA, R. S.: "Indications for operations on the lungs in nonspecific
    suppurative processes". Moscow, 1955. Second Moscow State Medical Inst
    imeni I. V. Stalin. (Dissertations for the degree of C$_a$ndidate of Medi-
    cal Science.)

SO: Knizhnaya Letopis' No. 50   10 December 1955.   Moscow.

BAKULEV, A.N.; KOLESNIKOVA, R.S.

Therapeutic fasting in chronic coronary insufficiency and in a number of other diseases. Trudy Inst. klin. i eksper. kard. AN Gruz. SSR 8:437-439 '63.   (MIRA 17:7)

1. Kafedra gospital'noy khirurgii II Meditsinskogo instituta, Moskva.

KOLESNIKOVA, R.S.; RODYGINA, G.V.; EDEL'SHTEYN, S.I.

Use of penicillin aerosols in chronic suppurative processes of the lung. Khirurgiia 32 no.8:39-41 Ag '56.   (MIRA 9:12)

Iz fakul'tetskoy khirurgicheskoy kliniki imeni S.I.Spasokukotskogo (zav. - prof. A.N.Bakulef) II Moskovskogo meditsinskogo instituta imeni I.V.Stalina i otdela eksperimental'noi terapii (zav. - prof. Z.V.Yermol'yeva) Vsesoyusnogo nauchno-issledovatel'skogo instituta antibiotikov.
          (LUNG DISEASES, ther.
              penicillin aerosols in chronic suppuration)
          (PENICILLIN, ther. use
              chronic suppuration of lungs, admin. in aerosol form)
          (AEROSOLS, ther. use
              penicillin in chronic suppuration of lungs)

KOLESNIKOVA, R.S., kand.med.nauk; MEYTINA, R.A., kand.biol.nauk

Studies of external respiration and of blood gases in patients
with chronic pulmonary suppuration. Nov.khir.arkh. no.1:66-
73 Ja-F '59.   (MIRA 12:6)

1. Kafedra fakul'tetskoy khirurgii II (zav. - prof.A.N.Bakulev)
2-go Moskovskogo meditsinskogo instituta i Instituta grudnoy
khirurgii AMN SSSR.
 (BLOOD, GASES IN) (RESPIRATION) (LUNGS--ABSCESS)

GERESIMOVA, A.V. (Moskva, ulitsa Kirova, dom 13, kv. 26); KOLESNIKOVA, R.S.

Treatment of tumors of the mediastinum. Grud. khir. 2 no.6:99-103
N-D '60.   (MIRA 14:1)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni S.I.Spasokukot-
skogo (dir. - akad. A.N.Bakulev) i khirurgicheskogo otdeleniya
pervoy gorodskoy klinicheskoy bol'nitsy imeni N.I.Pirogova (glavnyy
vrach zasluzhennyy vrach RSFSR L.D.Chernyshov).
                    (MEDIASTINUM--TUMORS)

BAKULEV, Aleksandr Nikolayevich; KOLESNIKOVA, Roza Samoylovna;
ROVNOV, S.A., red.; ROMANOVA, Z.A., tekhn.red.

[Surgical treatment of suppurative pulmonary diseases]
Khirurgicheskoe lechenie gnoinykh zabolevanii legkikh.
Moskva, Medgiz, 1961. 206 p.   (MIRA 15:2)
              (LUNGS--SURGERY)

KOLESNIKOVA, R.S.

Studying the antigenic properties of the causative agent of "madden-
ing" and investigating a serological method for its detection. Nauch.
soob. IAFAN SSSR   no.5:109-111 '61.   (MIRA 14:12)
                    (Yakutia--Foxes--Diseases and pests)
                    (Yakutia--Dogs--Diseases and pests)
                         (Serum diagnosis)

KOLESNIKOVA, R.S.

New medium for isolating and preserving Brucella strains from cattle
in Yakutia. Nauch. soob. IAFAN SSSR no.5:113-116 '61.

(MIRA 14:12)

(YAKUTIA--BRUCELLOSIS IN CATTLE)
(BACTERIOLOGY--CULTURES AND CULTURE MEDIA)

KOLESNIKOVA, R.S. (Moskva, Prosp. Mira, d.103,kv.155)

Study of protein fractions in chronic suppurations of the
lungs. Grud. khir. 2 no.1:82-85 Ja-F '60.   (MIRA 15:3)

1. Iz Instituta grudnoy khirurgii AMN SSSR (dir. - prof.
A.A. Busalov) i khirurgicheskogo otdeleniya I Gorodskoy
klinicheskoy bol'nitsy imeni N.I. Pirogova (glavnyy vrach -
zasluzhennyy vrach RSFSR L.D. Chernyshov).
                    (LUNGS--DISEASES)
                   (BLOOD PROTEINS)

KOLESNIKOVA, R.S., kand.med.nauk; BUKHARIN, V.A.

Pseudomyxomatosis of the abdominal cavity. Vest.khir. no.7:79-
88 '61.   (MIRA 15:1)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (dir. - prof. A.N.
Bakulev) 2-go Moskovskogo meditsinskogo instituta i khirurgiche-
skogo otdeleniya 1-y gorodskoy klinicheskoy bol'nitsy imeni
N.I. Pirogova (gl. vrach - L.D. Chernyshev).
                    (ABDOMEN—TUMORS)

BAKULEV, A. N., akad.; KOLESNIKOVA, R. S., kand. med. nauk (Moskva)

Fasting therapy (preliminary report). Klin. med. no.2:14-21 '62.
(MIRA 15:4)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni S. I. Spaso-
kukotskogo (zav. - akad. A. N. Bakulev) i Instituta grudnoy
khirurgii (dir. - prof. S. A. Kolesnikov) AMN SSSR.

(FASTING)

BAKULEV, A.N., akademik; SAVEL'YEV, V.S., doktor med. nauk; KOLESNIKOVA,R.S., kand. med. nauk (Moskva, prosp. Mira, d. 103, kv. 155); IGNATENKO, S.I.

Method of artificial blood circulation without using heparinized donor blood. Vestn. khir. Grekov. 90 no.4:3-8 Ap'63 (MIRA 17:2)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (direktor - akademik A.N. Bakulev) 2-go Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

USSR / KALESNIKOVA R P

reaction of atomic oxygen with ethane

USSR/Chemistry - Reaction Kinetics   11 Aug 53

"Elemental Reactions of Atomic Oxygen with
Methane," L. I. Avramenko and R. V. Kolesnikova

DAN SSSR, Vol 91, No 1, pp 107-109

Studied the reaction between O and CH_4 using a
method previously employed in other work. Results
indicate that the degree of conversion achieved
did not exceed that indicated by other workers
/western/, although data pertaining to flameless
combustion were included. MeOH was found in the
reaction products indicating that it forms as a

266T4

result of the interaction of O and CH_4 and is
converted to CH_2O. On the basis of this data,
it was difficult to ascertain which of two pos-
sible reactions (primary or secondary) forming
CH_2O takes place. Presented by Acad N. N.
Semenov 4 May 53.

USSR

The experimental determination of the sequence of
elementary reactions of atoms and radicals

KOLESNIKOVA, R. V.

Dissertation: "A Study of Elemental Reactions of Oxygens Atoms with Unsaturated
Hydrocarbons." Cand Chem Sci, Inst of Chemical Physics, Acad Sci USSR, 25 Jun 54.
(Vechernyaya Moskva, Moscow, 15 Jun 54)

SO: SUM 318, 23 Dec 1954

...lopment of organic synthesis based on the oxidation ...carbons from petroleum. S. R. Sergienko, *Prob-...* *Uglevodorodov. Akad. Nauk S.S.R.* ...1954 4-10. In the introductory remarks made ...All-Union meeting on 14–18 May 1961, an ...the use of petroleum in chemical industry was ...A brief summary was given of the achieve-...ments held in U.S.S.R. during the last 10 years ...in the theory of chain oxidation of hydrocar-...S. Sergienco. *Ibid.* 13–39 —A comprehensive ...of the following topics was given: direct reac-...saturated hydrocarbons, chain length and ...free radicals, effect of biradicals on the chain ...competition between the chain reaction and ...reaction among the mols., branching of chain ...and limiting phenomena, decay of chain reactions ...paraffins, wall effects in chain reactions ...Mechanism of negative catalysis in oxidation ...M. B. Nieman. *Ibid.* 40–50 —A review ...Elementary reactions of simple hydro-...with atomic oxygen. L. I. Avramenko and R. V. ...51-9. Oxidation of methane, ethane, ...hydrocarbons in the presence of hydrogen bromide.

12 references. Unique features of oxidation of paraffinic hydrocarbons in liquid phase. A. N. Bashkirov and Ya. B. Chertkov. *Ibid.* 46, 1876.—A review with references. The immediate effect of molecular oxygen on hydrocarbons of various structure in liquid phase. K. I. Ivanov. ... reviewed: heptane 2-hydro-... 2,3-dimethylhexane 2-hydro-... *MR*_D 37 91, ...hydroperoxide, ...*MR*_D 40.45: 1-...tetralin 4 hydroper-...hexahydronaphthalene ...55848, d_8 1.1114, ...hexahydronaphthalene ...PhCOOH, m. ...autoxidation of some alkanes and ... Preparations ...discussed in detail. ...products of Tetralin. A. I. ...4 —The mecha-...the autoxida-...

tion of hydrocarbons in the presence of hydrogen bromide. V. V. Matus and N. M. Emanuel. *Ibid*. 60-77 — A review. references. Investigation of oxidation labeled propylene. A. F. Lukovnikov. *Ibid*. 78-85 chromatographic activity of the reaction products references. Mechanism of oxidation of *Ibid*. 80 103 — A review with

references. oxidation products of tetram. O. A. Kninicva and I. A. Salmin. *Ibid*. 140-4 — The mech ... of tar formation was studied by analyzing the autoxida... products of The reaction extd. with 5% aq. ... of 1-dihydro-1(2H)-naphthalen ... Among the oxidation ... naphthyl hydroper ... naphthalenone; 3,4-dihydro ... naphthoquinone, *o*-HO2CC1 ... products. Synthesis of ... hydroperoxide and thermal decom position of ... hydroperoxides I. I. Yurzhenko, I ... *Ibid*. 145-51; *cf. C.A.* ...

GREGIENKO

Oxidation of petroleum fuels and kerosine with ... L. L. Jerev and R ... Souzono ... Oxidation of high molecular ... nous and petroleum oils in liquid phase ... A review w ... Industrial methods of oxidation of petroleum ... in liquid phase ... D. A ... ... diagrams of equipment ... Conditions ... ... maximum yields are given and ... from paraffins ... of technological processes ... Use of hydroxy acids from oxidation of petroleum ... as plasticizing materials ... all stages in review ...

Kolesnikova R.V.

USSR/Kinetics - Combustion. Explosions. Topochemistry. Catalysis.   B-9

Abs Jour   : Referat Zhur - Khimiya, No 6, 1957, 18553

Author   : L.I. Avramenko, R.V. Kolesnikova.
Inst   : Academy of Sciences of USSR.
Title   : Experimental Determination of Succession of Elementar
              Reactions of Atoms and Radicals.

Orig Pub   : in symposium: Tsepnyye reaktsii okisleniya uglevodoro-
              div v gazovoy faze. M., AN SSSR, 1955, 187-209

Abstract   : A more detailed report on work published earlier
              (RZhKhim, 1956, 61054).

KOLESNIKOVA, R.V.

USSR/Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry.
                    Catalysis, B-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61054

Author: Avramenko, L. I., Kolesnikova, R. V.

Institution: None Inst. Chemical Physics, Acad. Sci USSR

Title: Experimental Determination of the Sequence of Elementary Reactions
        of Atoms and Radicals

Original
Periodical: Izv. AN SSSR, Otd. khim. n., 1955, No 3, 386-394

Abstract: A description of the method of experimental determination of the
           sequence of elemental reactions of atoms and radicals. By means.
           of this method it is possible to determine from the final reaction
           products the primary interaction of atoms or radicals (artificially
           generated) with the studied molecule under jet conditions. There
           is presented a theoretical substantiation of the method and experi-
           mental data are given relating to reactions of O-atoms with C_2H_6
           and HCHO.

KOLESNIKOVA, R.V.

AVRAMENKO, L.I.; KOLESNIKOVA, R.V.

Chemical determination of the initial concentration of oxygen
atoms in a stream. Zhur.fiz.khim. 29 no.3:539-541 Mr '55.
(MIRA 8:7)

1. Akademiya nauk SSSR, Institut khimicheskoy fiziki, Moscow.
(Oxygen)

Kolesnikova R.V.

USSR/Kinetics - Combustion. Explosions. Topochemistry. Catalysis.   B-9

Abs Jour   : Referat Zhur - Khimiya, No 6, 1957, 18555

Author   : L.I. Avramenko, R.V. Kolesnikova.
Title   : Reactions of Oxygen Atoms with Ethylene.

Orig Pub   : Zh. fiz. khimii, 1956, 30, No 3, 581-588

Abstract   : The reaction of O atoms with C_2H_4 was studied at 150° and
               the pressure of 3 mm of mercury column by mixing in a
               flow. Basing on the analysis of the reaction products,
               a reaction scheme confirmed experimentally is proposed.
               The main initial process appears to be the reaction of
               breaking the double bound in C_2H_4 with the formation of
               CH_2O and the radical CH_2. It is shown also that the
               most probable reaction of the radical CH_2 with a O_2 mole-
               cule at temperatures to 150° is the reaction of formation
               of CH_2O.

Card 1/1   - 229 -

Kolesnikova R.V.

Abs Jour   : Referat Zhur - Khimiya, No 6, 1957, 18554

Author   : L.I. Avramenko, R.V. Kolesnikova.
Title   : On the Mechanism of Hydrogen Peroxide Formation from
               Atoms and Radicals.

Orig Pub   : Zh. fiz. khimii, 1956, 30, No 4, 763-768

Abstract   : The dependence of the amount of H_2O_2 forming from the
               discharge products in water vapor on the distance between
               the discharge and the trap was measured. The total con-
               centration of the radical OH was determined spectroscopi-
               cally. Comparing the amount of H_2O_2 found experimentally
               with the amount which could be expected, if it were pro-
               duced of OH, the authors arrive to the conclusion that OH
               could not be responsible for the formation of H_2O_2. The
               formation of H_2O_2 from O atoms and H_2O molecules on trap
               walls cooled with liquid air was observed, and it was
               shown that H_2O_2 was formed in the same way from gases

Card 1/2   - 227 -

AUTHORS: Avramenko, L. I., Kolesnikova, R. V.,   62-58-3-3/30
             Postnikov, L. M.

TITLE: A New Method for the Determination of the Velocity Constants
             of the Elementary Reactions of Atoms and Radicals (Novyy
             metod opredeleniya konstant skorostey elementarnykh reaktsiy
             atomov i radikalov)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk,
             1958, Nr 3, pp. 277-284 (USSR)

ABSTRACT: The authors suggested a new method for the determination of
             the above-mentioned velocity constants which was worked out
             by them. This method avoids many a difficulty connected with
             the measurement of the absolute concentration of the atoms.
             The reaction of the oxygen-atom with different molecules
             serves as example. All processes which take place in the ex-
             periment are schematically represented (see scheme pp. 277
             and 278). By means of the suggested method of measurement the
             summary velocity constant (in this case for the oxygen atom)
             can be determined. This also applies to the velocity con-
Card 1/2   stants of individual primary elementary reactions. It is

A New Method for the Determination of the Velocity Constants of
the Elementary Reactions of Atoms and Radicals   62-58-3-3/30

> pointed out that all conclusions are only valid in the case
> of sufficiently high A_o-values (initial concentration of the
> initial substance) in comparison with $(0)_0$ (initial concen-
> tration of the oxygen atoms). On the basis of the described
> method (see formulae 1-16) the velocity constants of the
> elementary reactions of the oxygen atoms with molecules such
> as CO, CH_4, CH_3OH were determined. Moreover the velocity
> constants of the reactions of the radicals CH_3 and C_2H_5 with
> the oxygen molecule were obtained. There are 13 references,
> 4 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
              (Institute for Chemical Physics, AS USSR)

SUBMITTED: January 21, 1957

Card 2/2

AUTHORS: Avramenko, L. I., Kolesnikova, R. V.   SOV/62-58-10-5/25

TITLE: Reactions of Free Ethyl Radicals With Molecular Oxygen
(Reaktsii svobodnykh etil'nykh radikalov s molekulyarnym
kislorodom)

ABSTRACT: The deficiency in most of the papers previously published
concerning reactions of aliphatic radicals with oxygen is
that the problem of the subsequent order of the formation
of reaction products is not explained. The authors of the
present paper chose another way to explain the problem
concerning the reactions of the ethyl radicals with molecular
oxygen. They attempted to determine the primary products of
the interaction of the ethyl radical with the oxygen molecule.
In the experiments carried out the authors succeeded in
producing ethyl radicals by the action of hydrogen atoms on
ethylene. The products of this reaction of the ethyl radical
with molecular oxygen (at temperatures of 100-300° C) are
either ethylene monoxide or acetaldehyde and hydrogen peroxide.

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Reactions of Free Ethyl Radicals With Molecular   SOV/62-58-10-5/25
Oxygen

The course of the reaction $\left(C_2H_5+O_2 \right)$ is to a high degree
influenced by the surface state of the reaction vessel. The
formation of ethylene oxide in the interaction of the ethyl
radical and the oxygen molecule takes place at the walls of
the reaction vessel, prepared in a corresponding way. The
interaction of the ethyl radical with the oxygen molecule
neither directly nor by way of the intermediate reactions
leads to the formation of the formaldehyde (at temperatures
of up to 300° C). There are 5 figures, 1 table, and
8 references, 3 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
              (Institute of Chemical Physics of the Academy of Sciences USSR).

SUBMITTED: April 18, 1957

Card 2/2

5(4)

AUTHORS: Avramenko, L. I., Kolesnikova, R. V.   SOV/76-32-12-19/32

TITLE: The Mechanism of Formation of H_2O and H_2O_2 in the Reaction
              of Hydrogen Atoms With Oxygen Molecules (O mekhanizme
              obrazovaniya H_2O i H_2O_2 pri reaktsii atomov vodoroda s
              molekuloy kisloroda)

ABSTRACT: The results obtained by other authors are given (Refs 1 to
              7). They point to the fact that the formation of water takes
              place in the interior of the reaction vessel, while hydro-
              gen peroxide forms on the refrigerated wall of the receiving
              vessel. The contradictions to be found in previous papers
              are probably due to differences in the surface finish of
              the walls of reaction vessels. To establish this more
              clearly, hydrogen atoms formed in the high-tension dis-
              charge tube were made to react with molecular oxygen at
              low pressure (6 mm Hg). The receiving vessel was cooled
              by liquid nitrogen. The wall of the reaction vessel had
              been pretreated with the reaction products of electric

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Chem.-Phys. Inst. Moscow AS USSR

The Mechanism of Formation of H_2O and H_2O_2 in the   SOV/76-32-12-19/32
Reaction of Hydrogen Atoms With Oxygen Molecules

discharge in hydrogen atmosphere. The absolute atom
concentration of hydrogen was measured by the heating of
a platinum wire or by binding with ethylene. The tests
confirmed the assumption that the water is formed in
the interior of the reaction vessel, and also that the
wall acts as actuator. It follows that the finish of the
wall surface also determines the yield. The tests further-
more confirmed the opinion that the hydrogen peroxide
is formed on the cooled wall of the receiving vessel. By
the addition of ethylene aldehydes are formed. If ethylene
is added to the mixture of H and O_2, aldehydes form
generously, while an ethylene-hydrogen mixture to which
oxygen is added has a lower aldehyde yield and produces
no formaldehyde. If the wall of the reaction vessel is
pretreated with the discharge products of the arc in
water vapor (and not in hydrogen), much less hydrogen
peroxide is produced, and by the addition of ethylene the
aldehyde yield is lower and no formaldehyde produced.
The investigation proves that a chain reaction with atomic
oxygen takes place, for which the lighting in the vessel

Card 2/4

The Mechanism of Formation of H_2O and H_2O_2 in the   SOV/76-32-12-19/32
Reaction of Hydrogen Atoms With Oxygen Molecules

(such as it is found in the case of atomic oxygen and
hydrocarbons) is yet another proof. The following
reaction process has been established:

$$H + O_2 +_{wall} \longrightarrow OH + O +_{wall}$$

$$OH + H_2 \longrightarrow H_2O + H; \quad O + H_2 \begin{cases} \nearrow H2O \\ \searrow OH + H \end{cases}$$
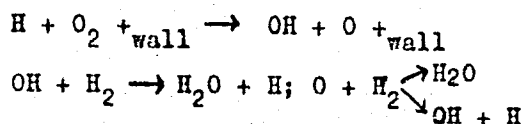
No molecular oxygen participates in the formation of H_2O_2.
Here, the reaction is as follows:

$$O + H_2O +_{cooled\ surface} \longrightarrow H_2O_2 +_{cooled\ surface}.$$
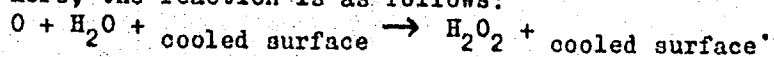
It was proved also by S. N. Foner and R. L. Hudson (Ref 6)
that this is not the case of a binding of two OH-groups.
Academician N. N. Semenov was very helpful with his
advice. There are 3 tables and 15 references, 5 of which
are Soviet.

Card 3/4

5(4)

AUTHORS: Avramenko, L. I., Kolesnikova, R. V.   SOV/62-59-4-33/42

TITLE: On the Reaction of Atomic Hydrogen With Ethylene (O reaktsii atomnogo vodoroda s etilenom)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 4, pp 746-748 (USSR)

ABSTRACT: This brief communication describes the investigation of the reaction $H + C_2H_4$. The investigation was carried out by the discharge tube method on a plant described in reference 15. Two characteristic results which were determined in the analysis of the reaction products in two experimental series with different jet speed are shown in percentages in table 1. Hence it appears that there is always less butane than ethane and propane formation. The ratio ethane-butane increases with a higher jet speed. The measurements of the concentration of hydrogen atoms (without ethylene addition) showed that the initial concentration of H atoms ranks 2 orders higher than the concentration of the ethylene radicals (with ethylene addition). Hence it may be concluded that ethane is formed without the ethyl radicals contained in the volume. Thus

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Inst. Chem. Phys., AS USSR

On the Reaction of Atomic Hydrogen With Ethylene   SOV/62-59-4-33/42

only a process is possible which proceeds on the surface of
the reaction vessel. In order to check this assumption
experiments were carried out in a vessel whose walls had been
covered with $ZnOCr_2O_3$. The results are shown in table 2.
Hence it appears that the ratio ethane-butane changed consider-
ably and approached the ratio observed in photochemical tests.
It was found that under the conditions assumed (low pressure,
fast jet and clean vessel walls) the reaction of the hydrogen
atoms with ethylene does not take place in the volume but
on the surface. In photochemical tests ethane is mainly formed
during the disproportionation of the ethyl radicals at a rate
pertaining to the volume process. In the discharge tube ethane
is mainly formed on the vessel walls with its characteristic
rate. For this reason the different results obtained in
photochemical tests and in investigations in the discharge
tube might go back to the different mechanisms and rates of
ethane formation. The authors thank V. L. Tal'roze and his
co-workers for the mass-spectrometrical analysis. There are
2 tables and 16 references, 1 of which is Soviet.

Card 2/3

5(4)

AUTHORS: Avramenko, L. I., Kolesnikova, R. V.   SOV/62-59-9-8/40

TITLE: The Reaction Kinetics and Mechanism of Oxygen Atoms With Carbon
            Monoxide

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
            1959, Nr 9, pp 1562-1570 (USSR)

ABSTRACT: This article contains a description of a method of determining
            the velocity constants for the vanishing of an atom or a radical
            during a reaction (by entering the bound state) on the forma-
            tion of carbon dioxide from carbon monoxide and oxygen. On the
            basis of the consideration of a bimolecular spatial process
            (collision of two components $CO + O \longrightarrow CO_2$) with low activat-
            ing energy and a small steric factor, and also from the con-
            sideration of a trimolecular process $(CO + O + M)$, a general
            equation was obtained for the velocity coefficient. In the
            statistical consideration of the path of an O-atom in the dis-
            charge tube, a function is found which expresses the dependence
            of the concentration on the traversed path of the atom (7).
Card 1/2   This function is assumed to be linear (interruption of the ex-

SOV/62-59-9-8/40

The Reaction Kinetics and Mechanism of Oxygen Atoms With Carbon Monoxide

ponential series after the first term), the concentration is determined at various "x" by experiment and herefrom the velocity constant is calculated. If this function cannot be assumed to be linear, a graphic analysis of the equation is made (Figs 1,2); the represented derivation is generally valid and can be applied to any atoms and radicals desired. The mentioned functions for CO and O are represented on figures 3-5 and the results are discussed. It was possible to draw a conclusion from these on the bimolecular process of the formation of CO_2 from CO and O. There are 5 figures, 1 table and 17 references, 5 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

SUBMITTED: December 11, 1957

Card 2/2

5.2600(A)
5.3200(A)
5(4)   66868

AUTHORS: Avramenko, L.I., Kolesnikova, R.V.   SOV/76-33-11-30/47

TITLE: Elementary Reaction of the Formation of Oxygen Atoms on the
                Glass Surface

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 11, pp 2548-2554
                (USSR)

ABSTRACT: At the study of the formation mechanism of water and hydrogen
                peroxide in the reaction of hydrogen atoms with oxygen
                molecules, oxygen atoms were observed in the reaction zone.
                Since the experiments were carried out at about 2 torr and
                up to 250°C, the problem of the formation mechanism remained
                unsolved. Investigations made by Hudson and Foner (Ref 2)
                showed that no HO_2 radical is in the reaction space at 1.7 torr,
                which was also confirmed by Ciguere and Harvey (Ref 3).
                Several authors (Refs 2,4) explain the formation of water and
                hydrogen peroxide by the influence of the glass surface of
                the reaction vessel. To clarify the problem mentioned in the
                title, experiments were made in two glass units (Fig 1). In
                one case the surface of the reaction vessel was treated with
                the reaction products of a hydrogen discharge and subsequently
Card 1/3   rinsed with phosphoric acid, and in the other case reaction

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Elementary Reaction of the Formation of Oxygen   SOV/76-33-11-30/47
Atoms on the Glass Surface

products of a water vapor discharge were used. Special
experiments were made on the course of a chain reaction at
which the concentration of the hydrogen atoms was measured
according to two methods. It was established that the water
forms due to a chain reaction, which was also confirmed by
experiments with ethylene additions. The experiments showed
(Table 1) that the wall of the receiver cooled with liquid
nitrogen, causes the formation of the hydrogen peroxide,
according to the reaction $O + H_2O + cold\ surface \rightarrow H_2O_2 + cold$

surface. Investigations on the dependence of the accumulation
rate of the water and hydrogen peroxide from the rate of
addition of the hydrogen showed (Table 2) that the formation
of the hydrogen peroxide decreases with a reduction of the
transformation percentage of the oxygen. When ethylene was
added, i.e. at the reaction $H + O_2 + C_2H_4$, the formation of

aldehydes was observed in the reaction vessel (and not on the
cold surface) (Table 3). The series of experiments in the
second reaction unit yielded results differing from those
Card 2/3   obtained in the above described experiments: considerably

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Elementary Reaction of the Formation of Oxygen   SOV/76-33-11-30/47
Atoms on the Glass Surface

less hydrogen peroxide was formed, and therefore less water;
with addition of ethylene, no formaldehyde was formed and only
small quantities of aldehydes formed. Finally it is mentioned
that the authors thank N.N. Semenov, Academician, for dis-
cussions and advice. There are 1 figure, 3 tables, and 9
references, 5 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva
(Academy of Sciences, USSR, Institute of Physical Chemistry,
Moscow)

Card 3/3

AVRAMENKO, L.I.; KOLESNIKOVA, R.V.

   Kinetics and mechanism of the reaction between ethyl radicals
and molecular oxygen. Izv.AN SSSR Otd.khim.nauk no.5:806-811
My '60.   (MIRA 13:6)

   1. Institut khimicheskoy fiziki Akademii nauk SSSR.
       (Radicals (Chemistry)) (Oxygen)

85602

S/062/60/000/006/015/025/XX
B020/B060

11.6200

AUTHORS: Avramenko, L. I., Kolesnikova, R. V.

TITLE: Kinetics and Mechanism of Interaction of Ethyl Radicals With
             Molecular Oxygen. Communication 2. Dependence of Reaction
             Kinetics on the Third Particle

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
             1960, No. 6, pp. 989-995

TEXT: The first part of this article has given a description of method
and measurement results of recombination rate constants in the interaction
of ethyl radicals with molecular oxygen for a constant concentration of
the third particle. The present paper provides the results obtained for
different concentrations of the third particle. It follows from the
empirically determined dependence of the effective rate constant of the
loss of ethyl radicals on pressure (Fig. 1) that the rate constant k_0^m
of the loss is proportional to pressure in the region concerned.
Fig. 2 shows different forms of function $k_0^{m} = f(M)$ calculated from

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Kinetics and Mechanism of Interaction of
Ethyl Radicals With Molecular Oxygen.
Communication 2. Dependence of Reaction
Kinetics on the Third Particle

S/062/60/000/006/015/025/XX
B020/B060

equation (4) for different ratios of the constants, where the concentration
of the third particle (M) is expressed by pressure p for $T = 421^\circ K$. It
may be stated that the loss of ethyl radical takes place according to a
trimolecular scheme with constant k_2, whose value has been determined at
about 3.10^{-28} $cm^6.sec^{-1}$, and which holds for the case of the third particle
being a H molecule. Fig. 3 shows the empirical dependence of the quantity
$1/k_0'''$ on $1/p_{H_2}$ for the recombination of ethyl radicals, while Fig. 4
illustrates the empirical dependence of the effective rate constant of the
reaction of the ethyl radical with oxygen atom on pressure. Fig. 5 shows
$1/k$ as a function of $1/p$ for the reaction of ethyl radicals with molecular
oxygen. The absolute value of the rate constant of the bimolecular reaction
in the formation of the high-energy $C_2H_5O_2^*$ radical from C_2H_5 and an O_2
molecule was determined at $k_1' = 1.1.10^{-12}$ $cm^3.sec^{-1}$, and the k_4'/k_5' ratio
of the decomposition rate of the radical concerned versus the stabilization
rate of the high-energy peroxide radical was determined at 2.10^{-17} cm^{-3}.

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85602

Kinetics and Mechanism of Interaction of   S/062/60/000/006/015/025/XX
Ethyl Radicals With Molecular Oxygen.   B020/B060
Communication 2. Dependence of Reaction
Kinetics on the Third Particle

The upper limit of the rate constant k_2' of the trimolecular reaction was found for the formation of the normal $C_2H_5O_2$ radical from $C_2H_5 + O_2$ in the case of H_2 being present as third particle: $k_2' \ll 2.3 \cdot 10^{-30}$ cm^6sec^{-1}.

There are 5 figures and 3 references: 1 Soviet, 1 Canadian, and 1 British.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute
               of Chemical Physics of the Academy of Sciences USSR)

SUBMITTED: December 15, 1958

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5.3280

80094

S/020/60/131/06/39/071
B004/B007

AUTHORS: Avramenko, L. I., Kolesnikova, R. V.

TITLE: Reaction of the Isopropyl Radical With the Oxygen Molecule

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 131, No. 6, pp. 1370 - 1372

TEXT: The authors set themselves the task of investigating the reaction mentioned
in the title under conditions which excluded every side-reaction of hydrogen used
for the preparation of the isopropyl radical with oxygen. This method was already
employed in the investigation of the reaction of the ethyl radical with molecular
oxygen (Refs 2,3). Molecular hydrogen was decomposed into atoms by electric dis-
charge, and was caused to react with propylene. Through a nozzle the zone of the
reaction $H + C_3H_6 \longrightarrow$ isopropyl was separated from oxidation of the isopropyl

radicals carried out at $150^\circ C$ and 8 torr by means of O_2. Preliminary experiments

had shown that in the oxidation zone (2 cm behind the nozzle) no H-atoms existed.
The oxidation products were collected in a vessel cooled with liquid nitrogen,
and then analyzed. The peroxide was polarographically analyzed as well as by
means of titration of the separated I_2 after the addition of KI. Acetone was

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Reaction of the Isopropyl Radical With the Oxygen
Molecule

80094

S/020/60/131/06/39/071
B004/B007

determined by means of the furfurol method. Isopropyl alcohol was qualitatively
detected by means of m-nitrobenzaldehyde. An analysis for aldehydes was made
polarographically. As shown by table 1, peroxide, acetone, and isopropylalcohol
were found, whereas analysis for aldehydes was unsuccessful. On the assumption
that the reaction temperature for the formation of aldehydes was too low, ex-
periments were undertaken, in which the oxidation zone of 150°C was followed by
a second reaction zone of 350°C. As shown by table 2, the peroxide yield de-
creased, and no more isopropyl alcohol formed, whereas the acetone yield de-
creased only slightly. Also in this case a formation of aldehydes could not be
detected. Herefrom the authors conclude that at 350°C the peroxide radical again
decomposes into isopropyl and O_2. The acetone probably forms on the surface of
the reactor vessel, which is covered with KCl. There are 2 tables and 6 ref-
erences, 4 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of
              Chemical Physics of the Academy of Sciences, USSR)

PRESENTED: October 26, 1959, by V. N. Kondrat'yev, Academician

SUBMITTED: October 20, 1959

Card 2/2

AVRAMENKO, L. I.; KOLESNIKOVA, R. V.

Kinetics and mechanism of the interaction between ethyl
radicals and molecular oxygen. Report No.2: Dependence of
the reaction kinetics on a third particle. Izv.AN SSSR.Otd.
khim.nauk no.6:989-995 Jl '60.   (MIRA 13:7)

1. Institut khimicheskoy fiziki Akademii nauk SSSR.
            (Oxygen) (Radicals(Chemistry))

AVRAMENKO, L.I.; KOLESNIKOVA R.V.

Kinetics and mechanism of the reaction of the CH_2OH radical with the O_2 molecule. Izv.AN SSSR Otd.khim.nauk no.4:591-598 Ap '61.

(MIRA 14:4)

1. Institut khimicheskoy fiziki AN SSSR.
            (Oxygen) (Radicals (Chemistry))

AVRAMENKO, L.I.; KOLESNIKOVA, R.V.; KUZNETSOVA, N.L.

Rate constant and mechanism of the reaction of oxygen atoms with methyl alcohol. Izv.AN SSSR Otd.khim.nauk no.4:599-603 Ap '61.
(MIRA 14:4)

1. Institut khimicheskoy fiziki AN SSSR.
(Oxygen)   (Methanol)

11. 1510

29121
S/020/61/140/005/017/022
B101/B110

AUTHORS: Avramenko, L. I., and Kolesnikova, R. V.

TITLE: Determination of HO_2 radicals by the epr method

PERIODICAL: Akademiya nauk SSSR, Doklady, v. 140, no. 5, 1961, 1100-1101

TEXT: The authors tried to find a method of determining HO_2 radicals more
simply than by the hitherto used mass spectrometry (Ref. 1, see below). The
HO_2 radical was found to be detectable by electron paramagnetic resonance
(epr). The following experiment is described: Hydrogen molecules were
reduced to atoms in an ozonizer tube, and sprayed at 90 cm/sec through a
nozzle into the reaction vessel into which molecular oxygen was also
flowing. Total pressure was 60 mm Hg. The resulting HO_2 radicals were
frozen by liquid nitrogen. The epr spectrum was taken with an ИХФ-2(IKhF-2)
radiospectrometer by G. A. Kapralova. Fig. 1 shows the epr spectrum. The
distance between points A and B is 23-26 oersteds. The g factor of the HO_2
radical nearly agrees with the g factor of diphenylincrylhydrazine. No epr
Card 1/2

Determination of HO_2 radicals....

29121
S/020/61/140/005/017/022
B101/B110

spectrum was observed when the reaction vessel was heated and then cooled to $77^\circ K$, or when there was no O_2 present in the experiment. Chemical analysis of the reaction products: H_2O_2 was found after opening the reaction vessel in all experiments in which the epr spectrum of the HO_2 radical was observed. If there was no epr spectrum, H_2O_2 was not present either. Apparatus and kinetics of reaction will be published later. There are 1 figure and 2 references: 1 Soviet and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Ref. 1: S. N. Foner, R. L. Hudson, J Chem. Phys., 21, 1608 (1953).

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences USSR)

PRESENTED: May 20, 1961 by V. N. Kondrat'yev, Academician

SUBMITTED: May 17, 1961

Card 2/1_2

29121
S/020/61/140/005/017/022
B101/B110

_Л. 1510_

AUTHORS: Avramenko, L. I., and Kolesnikova, R. V.

TITLE: Determination of HO_2 radicals by the epr method

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 5, 1961, 1100-1101

TEXT: The authors tried to find a method of determining HO_2 radicals more simply than by the hitherto used mass spectrometry (Ref. 1, see below). The HO_2 radical was found to be detectable by electron paramagnetic resonance (epr). The following experiment is described: Hydrogen molecules were reduced to atoms in an ozonizer tube, and sprayed at 90 cm/sec through a nozzle into the reaction vessel into which molecular oxygen was also flowing. Total pressure was 60 mm Hg. The resulting HO_2 radicals were frozen by liquid nitrogen. The epr spectrum was taken with an ИХФ -2(IKhF-2) radiospectrometer by G. A. Kapralova. Fig. 1 shows the epr spectrum. The distance between points A and B is 23-26 oersteds. The g factor of the HO_2 radical nearly agrees with the g factor of diphenylincrylhydrazine. No epr

Card 1/2

AVRAMENKO, L.I.; KOLESNIKOVA, R.V.; SOROKINA, M.F.

Rate constant and the mechanism of reaction between oxygen atoms
and acetaldehyde. Izv.AN SSSR.Otd.khim.nauk no.6:1005-1010 Je '61.
(MIRA 14:6)

1. Institut khimicheskoy fiziki AN SSSR.
   (Acetaldehyde) (Oxygen) (Chemical reaction, Rate of)

29518
S/062/61/000/011/005/012
B101/B147

_/1. 1510_
_/1. 1220_

AUTHORS: Avramenko, L. I., and Kolesnikova, R. V.

TITLE: Determination of the rates of elementary reactions of hydrogen atoms. Communication 1. Constant of the recombination rate $H + H + H_2 \rightarrow 2H_2$, and constant of the reaction rate $H + O_2 + H_2 \rightarrow HO_2 + H_2$

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 11, 1961, 1971-1976

TEXT: It was the purpose of the present paper to determine exactly the reaction constant in ternary collisions $H + O_2 + H_2$. So far, the values determined by other scientists have differed by two orders of magnitude. The method of measuring the constant has already been published by the authors (Ref. 7. Izv. AN SSSR. Otd. khim. n., 1958, 277). The device of Fig. 1 was used for the experiments. Atomic hydrogen was obtained in an ozonizer tube (5) whose voltage was increased by a transformer to 40,000 v.

Card 1/0 5

Determination of the rates of...

29518 S/062/61/000/011/005/012
B101/B147

To obtain a great number of H atoms in reaction vessel (7), the wall of nozzle (6) was coated with phosphoric acid. The reaction vessel was 20 mm in diameter and 1.2 m long. Valve (2) was similar to valves of Aqualungs used by divers, and guaranteed a constant pressure of electrolytic H_2 leaving cylinder (1). The apparatus was evacuated by an oil forepump; P_H of the reaction vessel was 60 mm Hg, and the rate w of the H stream was 90 m/sec. The experiments were conducted at room temperature. Liquid N_2 was used for cooling receiver (10). Results: (1) H_2O_2 could not be titrimetrically detected in 10 without O_2 additions. (2) With O_2 additions, $(6-7) \cdot 10^{-6}$ M H_2O_2 was titrimetrically detected in 10. (3) 40 mm behind the nozzle H_2O_2 formation is completed. Greater length of the reaction vessel no longer affects the H_2O_2 yield. (4) H_2O_2 does not form at lower pressures (10 mm). Hence, it is concluded that: (A) H_2O_2 formation is independent of the length of the cold wall and, therefore, takes place in

Card 2/0 5

Determination of the rates of...

29518 S/062/61/000/011/005/012
B101/B147

the bulk. (B) A third particle takes part in H_2O_2 formation. The reaction, therefore, necessarily follows the equation $H + O_2 + H_2 \rightarrow HO_2 + H_2$. In experiments with a cooled receiver placed only 40 mm off the nozzle, the asymmetric epr spectrum of the HO_2 radical could be taken in the frozen condensate. Its g factor hardly differs from that of diphenyl picryl hydrazyl. The total signal width is 23-26 oe. When the condensate is thawed, the signal disappears. With a greater distance between nozzle and receiver, HO_2 would not be detected. The reactions

$$H + O_2 + H_2 \xrightarrow{k} HO_2 + H_2 \quad (1); \quad HO_2 + HO_2 \rightarrow H_2O_2 + O_2 \quad (2);$$
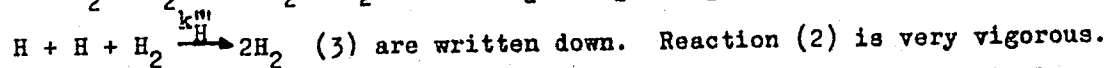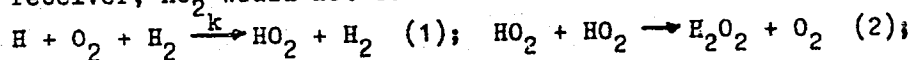
$$H + H + H_2 \xrightarrow{k'''} 2H_2 \quad (3)$$ are written down. Reaction (2) is very vigorous. The method published in Ref. 7 was used for determining k. The final concentration $[H_2O_2]_f$ is expressed by $[H_2O_2]_f = [O_2]_0 - [O_2]_f$, where $[O_2]_0$ is the initial oxygen concentration. Since $[H_2O_2]$ and $[O_2]$ were constant

Card 3/8 5

Determination of the rates of...

29518 S/062/61/000/011/005/012
B101/B147

under experimental conditions, the equation

$$[k/(k-k_H''')]([O_2]_0 - [H_2O_2]_f) + \{[H]_0 - [k/(k-k_H''')][O_2]_0\}(1-[H_2O_2]_f/[O_2]_0)^{k_H'''/k} = 0$$

is obtained. $(1 - [H_2O_2]_f/[O_2]_0)^{k_H'''/k}$ is exapnded in a series, the first
two members of which are used: $1/[H_2O_2]_f = 1/[H]_0 + k_H'''/k[O_2]_0$ (9). This
linear equation gives: $k = k_H'''/\tan\alpha$ (10). Hence, the determination of
k_H''' is necessary. It was conducted by a method described by the authors
(Izv. AN SSSR, Otd. khim. n. 1959, 1562). The experimental data yielded:
$k_H'''[H]_0 = w \tan\beta/[H_2]_0$ (13). It was found: $k_H'''[H]_0 = 9 \cdot 10^{-19}$ cm^3/sec·molecule.
Hence, $k_H''' = 5.2 \cdot 10^{-32}$ cm^6·sec^{-1}·molecules^{-2} is obtained for an initial
concentration $[H]_0 = 1.72 \cdot 10^{13}$ molecules/cm^3, which is in good agreement
with data obtained by other scientists. $k = 1.2 \cdot 10^{-33}$ cm^6·cm^{-1}·molecules^{-2}
is obtained from Eq. (10). This value is in good agreement with that given
by A. B. Nalbandyan, V. V. Voyevodskiy (Mekhanizm okisleniya i goreniya
Card 4/9

29518
S/062/61/000/011/005/012

Determination of the rates of...   B101/B147

vodoroda (Mechanism of hydrogen oxidation and burning), Izd. AN SSSR, 1949).
The authors thank G. A. Kapralova for taking the epr spectra.   There are
4 figures, 1 table, and 10 references: 4 Soviet and 6 non-Soviet.   The
two most recent references to English-language publications read as
follows: J. Amdur, J. Amer. Chem. Soc., 60, 2347 (1938); S. N. Foner,
R. L. Hudson, J. Chem. Phys., 21, 1608 (1953); 32, 1974 (1955).

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute
               of Chemical Physics of the Academy of Sciences USSR)

SUBMITTED: June 15, 1961

Fig. 1.   Diagram of apparatus.   (1) Cylinder with hydrogen; (2) special
valve; (3) tube with $CaCl_2$; (4), (9), and (11) taps; (5) ozonizer tube;
(6) nozzle; (7) reaction vessel; (8) manometer; (10) receiver; (12)
calibrated vessel for O_2; (13) gas meter for O_2; (14) transformer.

Card 5/5

AVRAMENKO, L.I.; KOLESNIKOVA, R.V.

      Photochemical investigation of the mechanism of reaction
      between oxygen atoms and acetaldehyde. Izv. AN SSSR.
      Otd.khim.nauk no.7:1231-1234 Jl '61.   (MIRA 14:7)

     1. Institut khimicheskoy fiziki AN SSSR.
         (Oxygen) (Acetaldehyde) (Photochemistry)

AVRAMENKO, L.I.; KOLESNIKOVA, R.V.; KUZNETSOVA, N.L.

Rate constant and mechanism of interaction between oxygen atoms and 1,2-dichloroethane. Izv. AN SSSR. Otd.khim.nauk no.9:1565-1571 S '61.   (MIRA 14:9)

1. Institut khimicheskoy fiziki AN SSSR.
                          (Ethane) (Oxygen)

AVRAMENKO, L.I.; KOLESNIKOVA, R.V.

Determination of rate constants of elementary reactions of hydrogen
atoms. Report No.1: Rate constants of the recombination $H + H +$
$H_2 \rightarrow 2H_2$ and of the reaction $H + O_2 + H_2 \rightarrow HO_2 + H_2$.   Izv.AN
SSSR.Otd.khim.nauk no.11:1971-1976 N '61.   (MIRA 14:11)

1. Institut khimicheskoy fiziki AN SSSR.
                (Hydrogen) (Chemical reaction, Rate of)
                      (Radicals (Chemistry))

42651

S/062/62/000/011/016/021
B117/B101

11. 1510

AUTHORS: Avramenko, L. I., Buben, N. Ya., Kolesnikova, R. V., Tolkachev, V. A., and Chkheidze, I. I.

TITLE: EPR study of radicals formed by hydrogen atoms reacting with benzene

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 11, 1962, 2079-2081

TEXT: The authors analyzed the epr spectra of free radicals formed by hydrogen atoms reacting with benzene in the gas phase at 20 and 200°C and frozen out with liquid nitrogen. Experimental conditions: silent discharge (6000 v, 150 ma), benzene concentration, $\sim 6 \cdot 10^{14}$ molecules per cm^3; hydrogen pressure, 14-15 mm Hg; linear flow rate, 160 cm/sec; duration, 12-18 min. The epr spectrum of the radicals formed at 20°C by the reaction $H^{\cdot} + C_6H_6$ is a triplet with a total splitting of 93 ± 5 oe. In addition each component of the triplet is split into four lines at a distance of 10 ± 1 oe. This spectrum was identified as the spectrum of

Card 1/2

the $C_6H_7^\cdot$ radical. When the reaction temperature is raised up to 200°C, not only the $C_6H_7^\cdot$ radical is formed, but also radicals of another type - obviously $C_6H_5^\cdot$ - which show a singlet. Their relative amount increases as the temperature is raised. Hence the two primary reactions may occur between hydrogen atoms and a benzene molecule::

$$H\cdot + C_6H_6 \nearrow \begin{matrix} C_6H_7^\cdot & (1) \\ \\ H_2 + C_6H_5^\cdot & (2) \end{matrix}$$
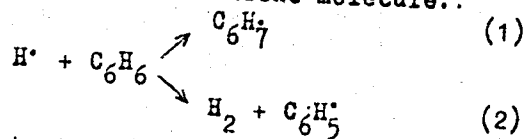
it is assumed that at room temperature reaction (1) mainly occurs and at higher temperatures reaction (2) takes place. The weak lines detected on the edges of all spectra were attributed to the background, of which the spectrum analysis took no account and which therefore requires a separate investigation. There are 2 figures.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

SUBMITTED: June 15, 1962
Card 2/2

AVRAMENKO, L.I.; KOLESNIKOVA, R.V.; KUZNETSOVA, N.L.

Rate constant of the reaction of oxygen atoms with ammonia.
Izv.AN SSSR.Otd.khim.nauk no.6:983-989 '62.   (MIRA 15:8)

1. Institut khimicheskoy fiziki AN SSSR.
          (Oxygen) (Ammonia) (Chemical reaction, Rate of)

S/062/63/000/001/006/025
B101/B186

AUTHORS: Avramenko, L. I., Kolesnikova, R. V., and Savinova, G. I.

TITLE: Rate constants and mechanism of the reaction of oxygen
                atoms with ethylene, propylene, and isobutylene

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
                khimicheskikh nauk, no. 1, 1963, 36-45

TEXT: A continuous vacuum apparatus was used for studying the reaction of
C_2H_4, C_3H_6 and i-C_4H_8 with atomic oxygen produced by high voltage
discharge in pure O_2. The reaction products were condensed with liquid
nitrogen and analyzed. Inflammation of the reaction mixture proceeding as
chain reaction was prevented by covering the walls of the reaction vessel
with KCl so that the quantity of the products formed corresponded to that
of the O consumed. Based on the equations derived previously (Izv. AN SSSR,
Otd. khim. n. 1962, 983), the constant of the reaction rate was determined
from the total aldehydes formed. The constant of the oxygen consumption
was determined by measuring the concentration of oxygen atoms, which

Card 1/4

Rate constants and mechanism ...
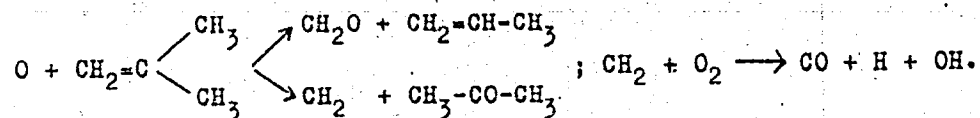
S/062/63/000/001/006/025
B101/B186

decreases along the reaction vessel. Results: (A) In the reaction with C_2H_4, the formaldehyde component of the aldehydes formed is 80% at 50°C and more than 90% at 200°C. Moreover, acetaldehyde forms. CO and CH_2O form in equal quantities. The content of free O atoms decreases linearly along the reaction vessel. $k_{C_2H_4} = 1 \cdot 10^{-13} \exp(-1350/RT)$ cm³·sec⁻¹·molecules⁻¹ and the activation energy is 1350 ± 500 cal/mole. (B) In the reaction with C_3H_6, the CH_2O component of the carbonyl compounds formed is 70% at 100°C, and 80-85% at 200°C. The second aldehyde forming is acetaldehyde. In addition acetone is formed (in a quantity ~15% that of the acetaldehyde). CO forms in a larger quantity than acetaldehyde. Consequently not only the CH_2 radical is oxidized to CO as in case A, but also the CH_3CH- radical is partially oxidized to CO.

$k_{C_3H_6} = 2.85 \cdot 10^{-12} \exp(-3000/RT)$ cm³·sec⁻¹·molecules⁻¹ and the activation energy is 3000 ± 500 cal/mole. (C) In the reaction with i-C_4H_8, 60-70%

Card 2/4

Rate constants and mechanism ...

of the carbonyl compounds is formaldehyde, the remainder acetone. Additionally, propylene forms in the same quantity as formaldehyde, and CO in the same quantity as acetone. Hence, the following reaction scheme is derived:

$$O + CH_2=C \begin{cases} CH_3 \\ CH_3 \end{cases} \begin{cases} CH_2O + CH_2=CH-CH_3 \\ CH_2 + CH_3-CO-CH_3 \end{cases} ; \quad CH_2 + O_2 \longrightarrow CO + H + OH.$$

The radical $=C(CH_3)_2$ is regrouped completely to propylene.

$k_{i-C_4H_8} = 4 \cdot 10^{-12} \exp(-2550/RT) cm^3 \cdot sec^{-1} \cdot molecules^{-1}$ and the activation energy is 2550 cal/mole. It was confirmed that in the reaction of atomic oxygen with unsaturated hydrocarbons mainly the C=C double bond is split and that carbonyl compounds, predominantly formaldehyde, form. There are 6 figures and 4 tables. The most important English-language references are: H. W. Ford, N. Endow, J. Chem. Phys., 27, 1277 (1957); F. Kaufman, J. Chem. Phys., 28, 352 (1958); L. Elias, H. J. Schiff, Canad. J. Chem., 38, 1657 (1960).
Card 3/4

Rate constants and mechanism ...

S/062/63/000/001/006/025
B101/B186

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
(Institute of Chemical Physics of the Academy of Sciences
USSR)

SUBMITTED: April 10, 1962

Card 4/4

Avramenko, L.I., Kolesnikova, R.V., and

Reaction rate constants and the mechanism of reactions of oxygen
atoms with methane and ethane

Akademiya nauk SSSR, Izvestiya. Otdeleniye khimicheskikh nauk,
no, 4, 1963, 620-627

The absolute values of the reaction rate of oxygen atoms
with ethane were measured over the range at reduced
pressure. The reaction activation energies of oxygen atoms with methane and
to 7800 and 5200 cal/M, and the pre-exponents equal to $3.4 \cdot 10^{-11}$
respectively were determined. The two basic directions in the
of oxygen atoms with methane are: the first, the formation of
the second, the formation of CH_2O and . The basic direction of
of oxygen atoms with ethane is the reaction proceeding with
of the $C-C$ bond and the formation of , , and . There

Avramenko, L. I.; Kolesnikova, R. V.; Sazinova, G. L.

The rate constant and the mechanism of reaction of oxygen atoms with

... Investiya. ... ..., 975-980

... reaction of n-butane with oxygen: formation of formaldehyde and
acetaldehyde

... has been made on the measurement of the reaction rate constant
... with n-butane between temperature ...
... of the magnitude of activation ...
... the reaction ...
... constant was found to be ...
...
... reaction mechanism between ...
... products of the reaction ...
... conclude that the reaction ...
... the ... cond. Orig. art. has ...) figure ... formulas.
... Inst. of Chemical Physics, Academy of Sciences SSSR

Card   2/

EPF(m)/EPF(c)/EWP(j)   Pc-4/Pr-4   RPL   Wa/JW/JW/RM
ACC NR AP5000400   S/0062/64/000/011/2090/2091

Ruben, N. Ya.; Kolesnikova, R. V.; Kuznetsova, N. L.; Trofimov, [2]

...als which form during reaction of atomic hydrogen with acetylene

...N SSSR. Izvestiya. Seriya khimicheskaya ... 11, 1964, 2090-2091

... acetylene hydrogen reaction ... hydrogen addition,

...

... This is a confirmation of an earlier ... on the formation of

... upon reaction of hydrogen ... This was confirm-

...ng the electron paramagnetic resonance spectrum of the radicals
...ing reaction of hydrogen atoms with acetylene in the gaseous phase at
...res of 20 and 280 C and cooled by liquid nitrogen, as well as that of rad-
...ed upon the action of H atoms on acetylene cooled to a temperature of

NR: AP5000488

...main reaction product at temperatures below 20 C was an addition ... C_2H_3 radical. At higher temperatures, another radical, probably ...ected in considerable yield. At temperatures of about 300 C the ... of both, addition and removal of hydrogen were about the same. ... had been described earlier and is shortly reviewed. "The authors ... I. I. Chkheidze for evaluating the results." Orig. art. has: 2

ION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of
Physics, Academy of Sciences SSSR)

TED: 20Mar64   ENCL: 00   SUB CODE: OC, GC

SOV· 003   OTHER: 001

EWG(j)/EWT(m)/EPF(c)/EPR/EWP(j)/EWP(t)/EWP(b)   Pc-4/Pr-4/Ps-4
SMR: AP5006411 IJP(c)/RPL   JD/RM   S/0062/65/000/001/0028/0035

Abramenko, L. I.; Kolesnikova, R. V.; Savinova, S. I.

Constants of the speeds of reaction of atomic oxygen with cyclohexane and benzene

SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1965, 28-35

cyclohexane, benzene, cyclic hydrocarbon, oxygen, oxygen compound, compound

Constants of the speeds of reaction of atomic oxygen with cyclohexane benzene were measured and the mechanism of these reactions were examined to clarify the behavior of the atomic oxygen with the aromatic and the ... of activation of the atomic oxygen reactions with